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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

REPORT

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SUBJECT Development of Cadmium Sulfide Crystals at the Institute for Medicine and Biology, Berlin-Buch

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THIS IS UNEVALUATED INFORMATION

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1. The [redacted]nt of the Academy Institute for Medicine and Biology in Berlin-Buch is working on the development of cadmium sulfide crystals for X-ray dosimetry. The work is being carried out by Physicist Krummbiegel (fnu) in the laboratory of Dr. Liselott Herforth. The crystals are produced by vaporizing cadmium in hydrogen sulfide at a temperature of 1,000° Centigrade.

2. Two methods of crystal activation are used:

   a. Fine silver is vaporized at the same time that the cadmium is exposed to the hydrogen sulfide stream. The silver diffuses into the crystals and ultimately improves their conductivity.

   b. The finished crystals are tempered at a temperature between 500 and 600° Centigrade with addition of fine silver.

   Experiments carried out thus far seem to indicate that method b. furnishes better results than method a. It is expected, however, that the experiments will have to be continued for a period of six more months before an ultimate decision on the preferability of either of the two methods can be reached.

3. Before the crystal is exposed to an X-ray source it is inserted into a circuit so that a voltage between 10 and 40 Volts is laid on the crystal. Higher voltages make the crystal unworkable. The voltage has to be gradually increased from 10 to a maximum of 40 Volts. The current must not exceed 200 micro-amperes because higher currents also make the crystal unuseable. The initial X-ray doses to which the crystal is exposed must be weak; later doses are gradually increased.

25 YEAR RE-REVIEW

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